

# PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No.: EGGER

In re Application of:	)
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HORST EGGER & OLAF SCHWANDT	)
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Appl. No.: PCT/AT2004/000442	)
	)
Int. Filing Date: December 15, 2004	)
	)
For: SORPTION ELEMENT	)

### FIRST PRELIMINARY AMENDMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

S I R:

Preliminary to the first Official Action in the above-entitled application, please amend the application as follows.

The Commissioner is hereby also authorized to charge any fees which may be required during the pendency of this application, including any patent application processing fees under 37 C.F.R. 1.17, and any filing fees under 37 C.F.R. 1.16, including presentation of extra claims, or credit any overpayment to Deposit Account No: 06-0502.

Please amend the above-entitled application as follows:

## **AMENDMENTS TO THE SPECIFICATION WITH MARKINGS TO SHOW CHANGES MADE**

Before paragraph [0001], add the heading --BACKGROUND OF THE INVENTION--.

Before paragraph [0008], add the heading --SUMMARY OF THE INVENTION--.

Amend the following paragraphs:

[0010] --As a result of this configuration, the sorption agent can be introduced between the grid elements without any help of a carrier material. A random accumulation by loose filling of the sorption agent in the sorption element offers the respectively subjected airflow with an especially large acting specific surface during the flow through the same, leading to a higher flow resistance. Heat and material transfer is thus improved, thus leading to an efficient adsorption and desorption behavior. Since the sorption agent is arranged as a loose fill, the advantage is gained that the possibilities for influencing an increase of the heat and material transfer and the increase of the specifically acting surface can be utilized.

Since the sorption agent is filled up to a height which is lower than the length of the sorption element, it is thus ensured that swirling is allowed to expand spatially. This embodiment further offers the possibility to adjust the quantity of sorption agent to the respectively desired air conditioning. This is advantageous because this also increases the scalability and thus also the controllability.

The sorption agent can be fluidized/swirled by an airflow, especially coming from below. It is advantageous in this respect that the specific acting surface of a fluidized bed is substantially higher than in the case of a homogeneous cross flow of a loose fill or even a conventional sorption wheel with carrier material. This leads to a further increase in the heat and material transfer.--.

Add the following paragraph between paragraphs [0015] and [0016]:

-- In an embodiment of the invention it can be further provided that the sorption element is arranged in a substantially perpendicular fashion.--.

Amend the following paragraphs:

[0023] -- This is achieved in accordance with the invention in such a way that the sorption system comprises at least two substantially parallel extending sorption elements according to ~~one of the claims 1 to 9~~ the invention. The advantage is that as a result of spatial closeness of the sorption elements alternating subjection to conditioning and/or regeneration airflow can be realized in a simple manner without decisively influencing the size of the constructional configuration.--.

[0025] -- The invention further relates to a method for a sorption-supported air-conditioning unit for dehumidifying and/or heating and/or cooling a room or an airflow with a sorption element according to ~~one of the claims 1 to 9~~ the invention, optionally a sorption system according to ~~claim 10 or 11~~ the invention.--.

[0029] -- This is achieved in accordance with the invention in such a way that the airflow to be conditioned is guided through at least one of the sorption elements in a conditioning cycle, with the airflow to be conditioned being dehumidified. In this manner, heat is obtained in addition to the dehumidification of an airflow according to the principle of sorption, which heat will be used directly for heating a room and/or an airflow or is recirculated to the air-conditioning unit for increasing efficiency. The use of sorption elements according to the ~~claims 1 to 9~~ invention, and optionally sorption systems according to the ~~claims 10 and 11~~ invention, ensure increased operational security in combination with higher efficiency and reduced maintenance work.--.

Before paragraph **[0032]**, add the heading --BRIEF DESCRIPTION OF THE DRAWING--.

Before paragraph **[0038]**, add the heading --DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS--.

Page 15, after the heading "CLAIMS" and before the first claim add --What is claimed is:--.